THE STUDY OF HCI ELEMENTS ON WEB EDUTAINMENT APPLICATION FOR KIDS (ANN NURSERY EDUTAINMENT)

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DECLARATION

I hereby declare that this project report entitled

THE STUDY OF HCI ELEMENTS ON WEB EDUTAINMENT APPLICATION FOR KIDS (ANN NURSERY EDUTAINMENT)

is written by me and is my own effort and that no part has been plagiarized

without citations.

STUDENT   : _____   **Date:** _____

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SUPERVISOR: _____   **Date:** _____

    (WAN SAZLI NASARUDDIN BIN SAIFUDIN)

DEDICATION

This thesis is dedicated to my beloved parents, who taught me to keep fighting until the end and always think positive all the time. They also taught me that no matter how big your problems, it can"t be solved without the effort.

ACKNOWLEDGEMENT

First and foremost, I would like to thank God for giving me strength and patience during the proses of developing this project. I also would like to give a million thanks and appreciation to En.Wan Sazli Nasaruddin as my supervisor for giving me many creative and effective ideas for me to complete this project successfully. He also supervised my project and helped me to find the background game that is so beautiful. Many improvements in this project came from his comments and suggestion. The spirit from him made me more enthusiastic to complete the project.

I would also like to thank my beloved parents who have been giving me support and motivation throughout developing my project. Also not forgotten to all my fellow friends Nuur Farhani, Siti Nabila, Han Yang, Alryana, Adut, Jason, Elly, Shu Teng and lots lots more whose give me some ideas and lend a hand to help me during developing the project. Last but not least, thank you to the other lecturers whose help me and give their point of view so I can produce the best result of this project.

ABSTRACT

Ann Nursery Edutainment is an animal matching game for male, female of offspring of animals. The research element that has been implemented in this game is buttons. How to make the buttons in the game more interactive and attractive is the main point throughout the designing phase.

There are only five animals in this game because it takes up a lot of time drawing and animating the character. Kids are mostly more attracted to moving objects. After research we found out that audio, graphic and animation are all essential in implemented kids" website interface. With the help of Adobe Suite which consist of Premier Pro, Soundbooth, Photoshop, Flash and a lot more, the prototype of this project is finally produced.

Besides, this game allows us to increase our knowledge on animal gender names that are seldom thought in books or in the normal classroom. It improves kids knowledge and make them more sociable in real life. As the game in implemented in computer base, they share the computer and eventually they will discuss among themselves and make more friends in the process of playing.

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CHAPTER I

INTRODUCTION

In this project titled "The Study of HCI Elements on Web Edutainment Application for Kids - Ann Nursery Edutainment", research on human computer interaction (HCI) of buttons in the aspect of color, position or placement, design and size will be conducted.

Kids and adults are different; HCI aspects will make the website more user-friendly to kids. Ann Nursery Edutainment will be a button oriented game which kids navigate and play only using all kinds of different buttons.

A sex (female, male) and offspring animal name matching game will be designed to conduct this button research. A variety of educational games in the

market with different color, position, shapes and sizes will be used to gather information. It is then offered to the kids to play and observation will be done to determine the best button design and best button position on the interface as well as the most suitable size and color of the buttons. The best button that can attract kid"s attention and the most clicked button in playing the game for a long period of time will be recorded.

At the end of this project, all information and details gathered will be analyzed and implemented to a new educational game develop to support the research of Ann Nursery Edutainment.

1.1   Project Background

Nowadays, there quite a number of engaging educational websites and games to help children strengthen and consolidate their literacy, numeracy, science and other knowledge. Millions of children nowadays can easily reach for cellphones and computers. Research has shown that children learn best at preschool age. But among some of the games, there are a few games that children have difficulty interacting with, for example kids cannot find the next and the skip button to continue playing the games.

There are a few current researches about "Position of navigation buttons affect the usability of apps for kids" and "Usability Issues in designing websites for kids" that I make reference from.

The proposed methodology of my project is Multimedia Mobile Content Development Methodology (MMCD) Framework and Methodology which is designed by En. Wan Sazli Nasaruddin Bin Saifudin. The research element in my project will be determining the suitable color, position, design and size of button in an educational game for kids.

The objective of this project is to investigate on the existing HCI elements used in online and web games for kids, design and develop HCI-friendly online web edutainment application for kids with suitable button size, color, design and position. Lastly, to evaluate the proposed HCI elements for online or web based edutainment application for kids with suitable color, position, design and size that suits kids" desire.

The expected outcome of this project will be a user-friendly educational game with easy interactive buttons that can be easily played by kids.

1.2   Problem Statements

Website games have become the most effective learning place for kids of all ages. That is we should develop more interactive games for them to learn more in order to improve their knowledge. Nowadays, there are a number of existing educational games online, but kids encounter a lot of problem interacting with website interface. They cannot find the location of the next button or even the skip button to continue playing.

Developing games is easy but to develop games that attract children"s interest and attention to play is hard. Dull button designs makes the kids lose interest and not interested in playing in.

1.3 Objectives

a) **To investigate on the existing HCI elements used in online and web games for kids.**
   - There are a lot of website educational games online now. In this project, the comparison of few existing games will be used to create a table of comparison in terms of age platform, aimed age, theme used, color genre, music avalability and lots more.

b) **To design and develop HCI-friendly online web edutainment application for kids.**
   - A research on ways to develop interesting educational games with attractive interface and interaction buttons will be carried out. Based on research and some questionaires, we determine the favorite color and buttons along kids to design something that suits their taste.

c) To evaluate the proposed HCI elements for online or web based edutainment application for kids.

- After detailed research and analization, an animal tree learning game will de developed to show the findings obtained during the research. The game will be handed over to some children to play to get feedback and to validate the research and finding results at the end.

1.4   Research Question

- How effective is delivering an animal tree learning game on website platform?

    Nowadays a lot of people have their own tablet or smartphone, but to target a larger market like for the entire school or kindergarden, website is the most suitable platform as our game delivery medium. Computer is an asset that is more reliable to schools because has a wider screen and can be shared among two (2) person compared to tablets that is quite fragile under the hands of kids at a younger age.

1.5   Project Scope

In this session, target audience and limitation of the project will be stated.

1.5.1   Target audience

The target audience for this project is toddler from kindergarten as well as primary school kids aged between five (5) to twelve (12) years old. At this age, they learn basic animal names; therefore this project is very suitable for them.

1.6   Project Framework
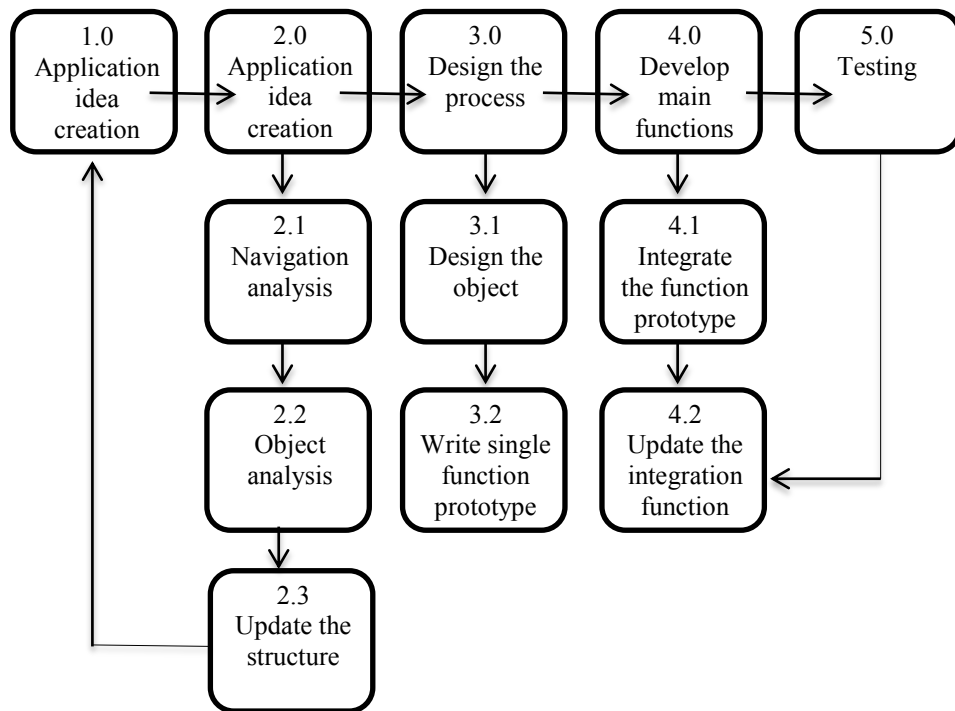
Figure 1: MMCD Project Framework

The development process of this project usses MMCD (Multimedia Mobile Content Development) that consist of five (5) main phases. Using this MMCD for a website development makes the process easier when converting a webpage game into mobile game for future intergration after the final prduct is done. This is because Adobe Flash has this new feature of exporting games directly to Android and IOS platforms. The details of the process will be discuss further in Chapter 3.

1.7   Project Significant

Educational games are among the important elements that can improve the knowledge of children these days while keeping the environemnt paperless.

A lot of business chance will appear once this game is launched. As for an example, kindergarden and primary schools that have computer labs will display our game for their students to play around during free periods as well as normal learning syslubus. Therefore, this project is to take part in effort to promote e-education to children at a young age.

Summary

It is believed that an interactive animal tree learning game is expected to be produced after this project is completed. The elements needed to consider while making this game effectively will be studied through the research. The targer user for this project will be the young generation aging from five (5) to twelve (12) years old respectively. This game will be developed on website platform. It is believe to be a helpful interactive game for kids to play while imporving their knowledge in an effective way.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

This chapter described in details about the related literature that has been written before to support my project. Literature reviews are secondary sources that can be interpreted as a review of an abstract accomplishment. Besides, it may enlarge knowledge and information about topic chosen. When conducting a research, author needs to analyse related data through all references such as books, person or internet.

Next, we will continue discussing on the research activities and methodology that is used in this project. The method to gather data and analyse data will be further explained in this chapter. Choosing a suitable methodology is very important because it can really helpful assisting us in completing the project successfully.

2.1   Area of Study

2.1.1   What is website edutainment?

A website edutainment such as games, films or shows that are designed to teach something can also be considered as a digital game-based game application. It has become an important part of most of the children"s leisure life.

According to an article about computer games and learning also knows as edutainment, it stated that one of the premises is that computer games can provide a new way to motivate today"s student to learn. That is why I have decided to use website game as the start to motivate kids in learning at a young age, so that they will be more knowledgeable in time to come.

Play is our brain"s favorite way of learning thing. (Diane Ackerman, 2012)

Based on the phase above, since play is our brain"s favorite way of learning things, it is more preferable to develop an educational game webpage, also known as edutainment website because it is becoming more and more popular around the globe. The capability of learning is higher among a kid, which is why I choose to develop an educational game for the kids. It doesn"t only benefit the kid who is playing it; but it is also beneficial to their parents that are too busy or could not spend a large amount of time tutoring their beloved children

In line with developments in learning theory, research that has examined children"s self-motivated computer gameplay sees their learning as a process of

participation in practice rather than a process of acquisition of facts or disconnected „pieces" of information, example „doing" rather than „knowing". This takes a variety of different forms. (Mackereth, 1998)

The effectiveness of learning though games is proven to be more helpful then the normal classroom study. That is why we can implement classroom"s normal boring study into something more interesting for kids such as classroom study with website educational games. This kind of digital edutainment comes with music and motion that keeps the students attracted. With this digital edutainment, we can significantly improve the learning environment to be more fun and enjoyable while gaining knowledge.

This Funbrain website had become the internet"s number one education site for kids of all ages.

Figure 2: Funbrain Website Games

2.1.2 Why use computer for website games?

The findings by Alison showed that the teachers in both studies felt that the pupils were involved considerably more in planning and evaluation during games for understanding lessons, a finding supported by the pupils themselves who reported higher enjoyment levels, and a much greater involvement in lessons.

The effectiveness of using game as an electronic based learning has become more and more popular now. As we all may know, more and more schools are now equipment with computer labs to accommodate with the upcoming digital world. Even though some schools may only have a few computers, but sharing two (2) to three (3) children per computer is made available with the big desktop screen and the long keyboard available.

In this project we choose to use computer instead of tablet because not all schools have the modal to get each student a mobile tablet for learning purpose. Although some private schools may have that facilities, but our target audience is to aim for everyone that has the interest in learning no matter how rich or how poor they are.

The larger screen on the computer desktop makes it easier for children to share with each other and have interaction not only with games but also with their friends. However, if we use tablet as a medium to deliver the game, the effect will not be that obvious because not every parents have the money to get tablet for their kids.